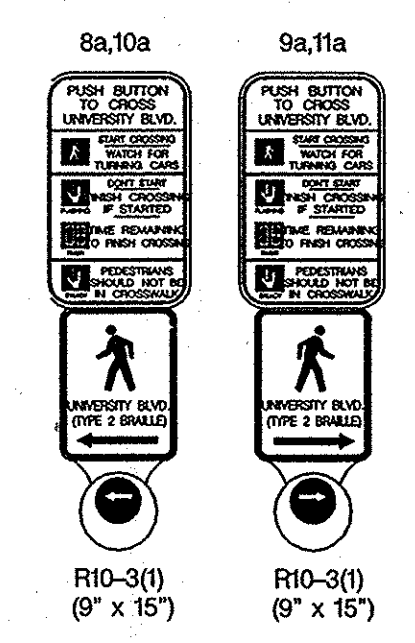
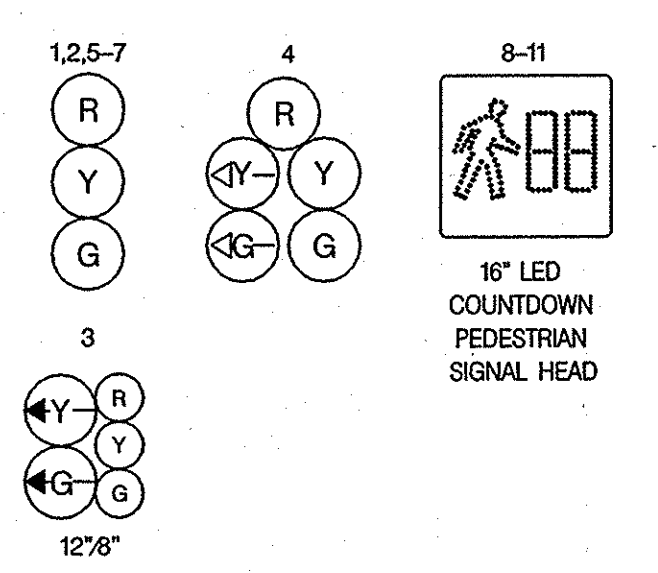




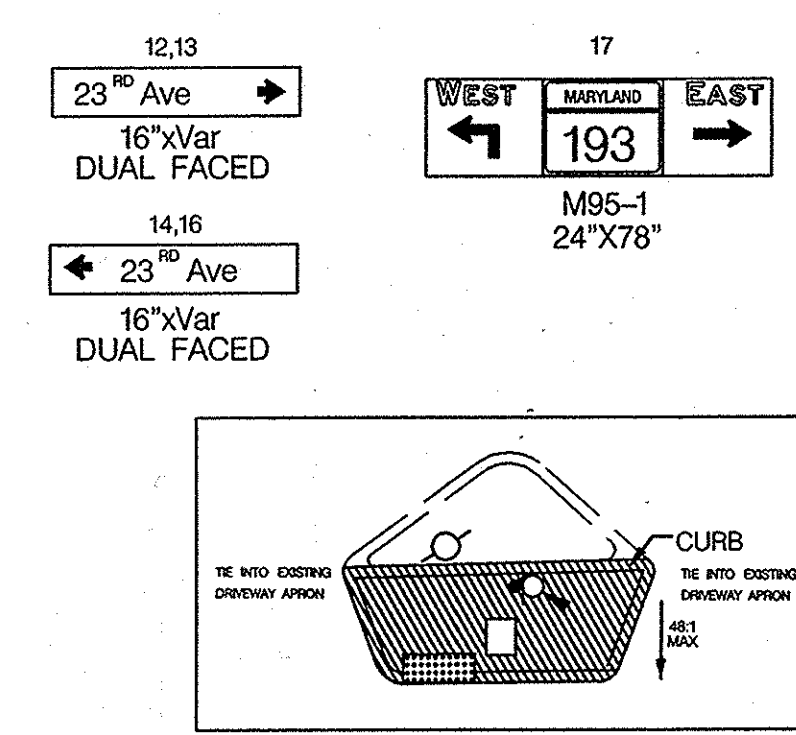
### PROPOSED SIGNS



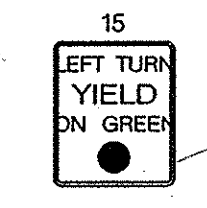
### PROPOSED L.E.D. SIGNALS



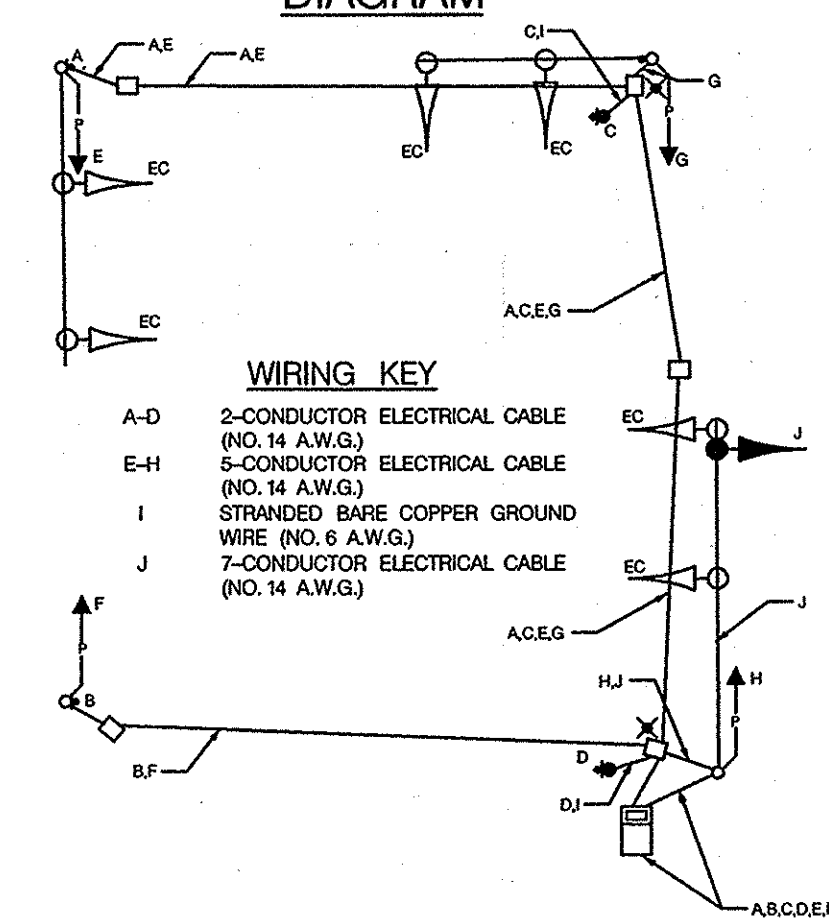
### EXISTING SIGNS



### EXISTING SIGNS TO BE REMOVED



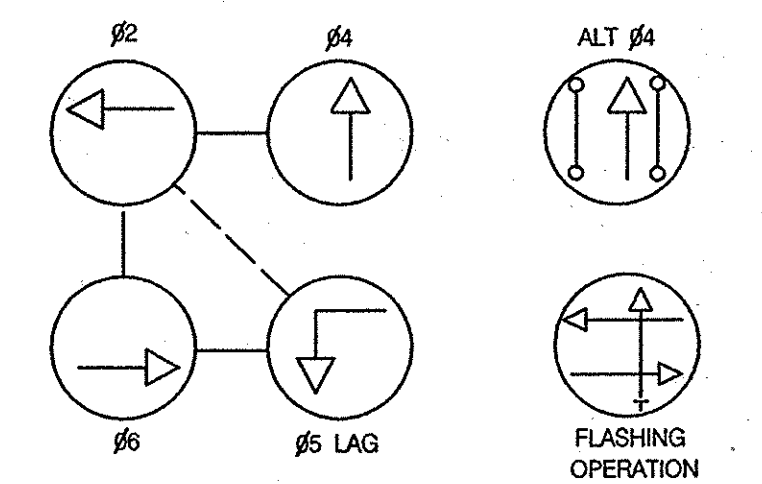
### WIRING DIAGRAM



#### WIRING KEY

- A-D 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- E-H 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- I STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- J 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

### NEMA PHASING



PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY  
PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY

MD 193 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION

EB MD 193 (UNIVERSITY BLVD)

WB MD 193 (UNIVERSITY BLVD)

23 RD AVENUE

### PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE MODIFICATION OF THE EXISTING TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF MD 193 AND 23 RD. AVENUE IN PRINCE GEORGES COUNTY, MD 193 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

### INTERSECTION OPERATION

THE INTERSECTION CURRENTLY OPERATES IN A NEMA FOUR-PHASE, FULLY ACTUATED MODE WITH AN EXCLUSIVE-PERMISSIVE LEFT TURN PHASE FOR W.B. MD 193 AND ALTERNATE PEDESTRIAN PHASING ACROSS THE BOTH LEGS OF MD 193. THE EXISTING PHASING WILL NOT CHANGE.

### PROJECT CONSTRUCTION

WORK WILL CONSIST OF REPLACING THE STANDARD PEDESTRIAN SIGNALS WITH COUNTDOWN PEDESTRIAN SIGNALS AND INSTALLING NEW AUDIBLE-TACTILE PEDESTRIAN PUSHBUTTON STATIONS FOR THE MD 193 CROSSINGS. ADDITIONAL WORK WILL INCLUDE REPLACING THE EXISTING VEHICLE SIGNAL INDICATIONS WITH BLACK FACE L.E.D. INDICATIONS.

### EQUIPMENT LIST "A"

A. EQUIPMENT TO BE FURNISHED BY SHA AND INSTALLED BY CONTRACTOR.

QUANTITY	DESCRIPTION
4 SF	R 10-3(I) SIGN (9 IN. X 15 IN.) GROUND MOUNTED

### EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR  
ALL EQUIPMENT SHALL HAVE CATALOG CUTS SUBMITTED TO OOTS FOR APPROVAL PRIOR TO INSTALLATION.

ITEM NO.	QUANTITY	DESCRIPTION
1001	1 EA	MAINTENANCE OF TRAFFIC
2002	2 CY	TEST PIT EXCAVATION
5003	200 LF	12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
5005	200 LF	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH
6001	120 LF	STANDARD TYPE "A" COMBINATION CURB AND GUTTER
6002	600 SF	4 IN. CONCRETE SIDEWALK
8001	22 EA	12 IN. L.E.D. SIGNAL HEAD SECTIONS
8003	1 EA	2-WIRE CENTRAL CONTROL UNIT
8007	3 EA	8 IN. L.E.D. SIGNAL HEAD SECTIONS
8009	4 EA	ADJUST EXISTING HANDHOLE TO GRADE
8010	4 EA	AUDIBLE-TACTILE PEDESTRIAN PUSHBUTTON AND SIGN
8011	1 EA	10 FT. BREAKAWAY PEDESTAL POLE
8014	4 EA	LED 16 IN. COUNTDOWN PEDESTRIAN SIGNAL
8017	1 EA	REMOVE AND DISPOSE OF EXISTING EQUIPMENT
8026	20 LF	3 IN. SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
8027	50 SF	DETECTABLE WARNING SURFACE
8030	1 CY	CONCRETE FOUNDATION
8033	30 LF	NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE
8045	4 SF	INSTALL GROUND MOUNTED SIGN
8052	2 EA	GROUND ROD 3/4" DIA. X 10' LENGTH
8056	1 EA	CUT CLEAN GALVANIZED AND CAP TRAFFIC SIGNAL STRUCTURE
8058	530 LF	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
8060	530 LF	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
8061	80 LF	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)

### APS WILL FUNCTION AS FOLLOWS

- FOR MD 193
- A. WHEN PEDESTRIAN LOCATES AND PASSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL BE "WAIT TO CROSS MD 193."
  - B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.
- FOR 23RD AVE.
- A. WHEN PEDESTRIAN LOCATES AND PASSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT WILL BE "WAIT TO CROSS MD 23RD AVE."
  - B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

### GENERAL NOTES

- ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS, HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS, TO MEET CLEARANCE AS SPECIFIED IN MD 816.03, MD 816.01, MD 816.02, MD 816.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
- ALL INTERNAL CABINET WIRING TO BE PERFORMED BY THE SHA SIGNAL SHOP. THE CONTRACTOR SHALL DELIVER THE APS CENTRAL CONTROL UNIT TO THE SHOP FOR TESTING AND PROGRAMMING.
- PUSHBUTTONS ARE TO BE LOCATED SO THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
- THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM THE FACE OF THE PUSHBUTTON TO THE FACE OF THE PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
- PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
- LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SEC. 4E.09 AND FIG. 4E.2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE", IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATION UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.

### CONSTRUCTION DETAILS

- A. REMOVE EXISTING SIGNAL HEADS AND INSTALL NEW SIGNAL HEADS IN EXISTING LOCATIONS.
- B. REMOVE EXISTING SIGNAL HEADS AND NOTED SIGN. INSTALL NEW SIGNAL HEADS IN EXISTING LOCATIONS.
- C. REMOVE EXISTING PEDESTRIAN PUSHBUTTON AND PEDESTRIAN SIGNAL AND INSTALL NEW PEDESTRIAN SIGNAL.
- D. REMOVE EXISTING PEDESTRIAN SIGNAL AND PUSHBUTTON AND INSTALL NEW PEDESTRIAN SIGNAL AND NEW AUDIBLE-TACTILE PEDESTRIAN PUSHBUTTON STATION.
- E. INSTALL 10 FT. BREAKAWAY PEDESTAL POLE CUT TO 5 FT. (CUT, CLEAN, GALVANIZE, AND CAP) AND NEW AUDIBLE-TACTILE PEDESTRIAN PUSHBUTTON STATION. (NOTE: INSTALL 1-3 IN. SCHEDULE 80 PVC CONDUIT BEND)
- F. INSTALL 3 IN. SCHEDULE 80 PVC CONDUIT-TRENCHED
- G. REMOVE EXISTING SIDEWALK RAMP AND INSTALL NEW SIDEWALK RAMP (STD. NO. MD 655.12) WITH DETECTABLE WARNING SURFACE (STD. NO. MD 655.40)
- H. ADJUST EXISTING HANDHOLE TO GRADE
- I. USE EXISTING CONDUIT
- K. REMOVE EXISTING SIDEWALK RAMP AND INSTALL NEW CUT-THROUGH (STD. NO. MD 655.21) WITH DETECTABLE WARNING SURFACE (STD. NO. 655.40)
- L. REMOVE EXISTING SIDEWALK RAMP
- M. REMOVE EXISTING SIDEWALK RAMP AND INSTALL NEW SIDEWALK RAMP.
- N. EXISTING HANDHOLE
- O. REMOVE EXISTING PAVEMENT MARKINGS.
- P. INSTALL 12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS.

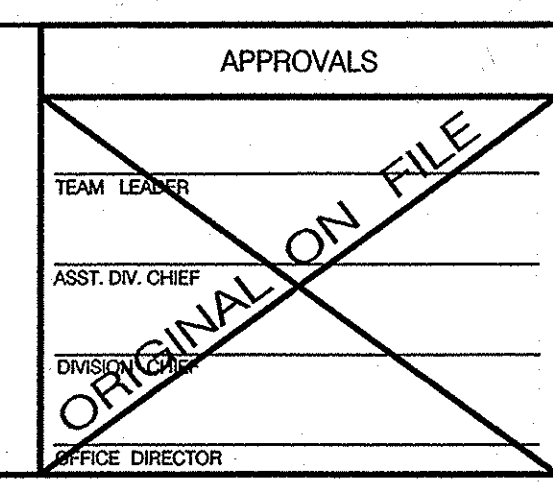
TOD NO: AT925-32  
SHA NO: PG587A57/B57  
MD193@23RD AVE/WEST PARK



STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION  
**TRAFFIC SIGNAL PLAN**  
MD 193 (UNIVERSITY BLVD.)  
AND 23 RD. AVENUE

SCALE	1"=20'	DATE	9/4/93	CONTRACT NO.	
DESIGNED BY	S. RENZI	COUNTY	PRINCE GEORGES		
DRAWN BY	S. RENZI	LOGMILE	16019301.35		
CHECKED BY	WR	T.I.M.S. NO.	1 320		
F.A.P. NO.	NA	TOD NO.			
DRAWING NO.	TS-1022-B	SHEET NO.	1	OF	2

**TRAFFIC CONCEPTS** INC.  
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APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	